

probably of Bala age, as *T. antiqous*, both from a collection sent by Mr. J. B. Morgan, of Welshpool, to Prof. Lapworth for identification. A list of the species of *Phyllopora*, hitherto described from Lower-Silurian beds, and of both Upper and Lower Silurian forms of *Thamaiscus*, was added, and the relations of the various known species to those described in the present paper were discussed at some length.

January 28, 1885.—Prof. T. G. Bonney, D.Sc., LL.D., F.R.S.,  
President, in the Chair.

The following communication was read:—

“On some new or imperfectly known Madreporaria from the Great Oolite of the Counties of Oxford, Gloucester, and Somerset.”  
By R. F. Tomes, Esq., F.G.S.

The main object of the present paper, which is supplementary to one already published in the Quarterly Journal (vol. xxxix. p. 168), was to describe a section of the Great Oolite at Milton, in Oxfordshire, another at the Lime-kiln quarry near Cirencester, and some outcrops of the same beds in the neighbourhood of Bath, on Farley Down, Combe Down, and Hampton Down, the localities from which so many of the types of corals described by MM. Milne-Edwards and Haime had been derived. Lists of the corals obtained from particular beds in each of the sections mentioned were given, and several of these corals were described as new, remarks being appended as to a few previously described forms. In conclusion, a brief description was added of the conditions under which the coralliferous deposits in the neighbourhood of Bath had been formed, and of their probable correlation with the Great-Oolite strata of Oxfordshire.

## MISCELLANEOUS.

*On a new Genus of the Family Sarcopsyllidæ.*  
By WLADIMIR SCHIMKEWITSCH.

IN the month of May 1884, N. A. Majew sent me from Turkestan a considerable number of specimens of a still undescribed flea, which attaches itself, after the fashion of a mite, to the bodies of cattle, and causes an exceedingly serious injury to the herds feeding in the mountain-valleys of the Tjan-Schan. The statements published in the Turkestan journals, and likewise communicated to me by Majew, run as follows:—The distribution of this parasite is confined to the valleys of the Tjan-Schan and the Baissaur mountains (the source of the river Tschilika). It also frequently occurs in Tashkent and Tsischgent, upon cattle driven there for sale. The parasite appears in the autumn, when snow is already lying upon

the mountains, and it is to be observed in the greatest abundance during severe frosts. This flea is parasitic upon horses, sheep, camels, and horned cattle, in which it produces great debilitation of the organisms, and in the young animals even death. The Kirgise name it *Alakurt*, i. e. motley worm or motley insect, for originally the *Alakurt* is nearly black in colour, but when distended it becomes white with variegated bands.

The examination of this parasite convinced me that it belongs to the family Sarcopsyllidæ, forming a new genus of that family. In consideration of the worm-like form of the body of a distended parasite I propose to name it *Vermipsylla*, and for a specific name I let its local denomination, *Alakurt*, stand. All the specimens of *Vermipsylla Alakurt* that I have received prove to be females, from which we may conclude that the males do not attach themselves to the bodies of the cattle and become distended. Even the manner of the distention exactly resembles that of *Rhynchopsylla pulex*—that is to say the chitinous rings of the abdomen separate from each other, during which they retain their proper distribution, but no longer touch one another, while at the same time the subchitinous membrane situated beneath the chitinous scales of the abdomen becomes extended.

I now pass to a brief description of this form. The length of the strongly distended female attains 6 millim. The colour of the head and thorax and of the abdominal rings is dark brown; the subchitinous membrane is milk-white. The head is of considerable size; it is rounded off on the dorsal surface, and slopes strongly from behind forward. The antennal pit is situated nearly in the middle of the head, and the eyes, which are pretty large, are situated in the anterior half of the head near its inferior margin (compare *Rhynchopsylla*). The maxillæ have the form of triangular lancet-like plates, pointed in front, but the apex is not bent backwards, as is the case in *Rhynchopsylla*.

The formula of the maxillary palpi is 3 : 1 : 2 : 4. In the organization of the labium *Vermipsylla* deviates from both the families of Aphaniptera. The palpiform parts of the labium are divided into false joints of uncertain number, varying between eleven and fourteen. Each false joint bears at its anterior extremity a pair of minute hairs, of which the outer one is much more developed. The basal joint, which is much longer, bears on each side a pair of equally developed hairs; and the terminal joint, which is also longer, bears two tufts of short blunt setæ. The upper edge of the tongue is quite smooth. The mandibles have at the extremity only two claw-like teeth, which are directed outwards. The mandibles, labium, and tongue are of equal length, and more than twice as long as the maxillary palpi. The second joint of the antennæ has a cup-like form, and bears at its outer margin (in the position of rest) a row of very long hairs which entirely cover the third joint. This latter has no emarginations, but it has some folds. The anterior margin of the antennal pit is thickened, but the row of hairs

is deficient on the posterior margin. The pronotum is very feebly developed, the mesonotum is rather longer, and the metanotum exceeds in length both the preceding taken together.

In the organization of the pleuræ and of the wing-like scales of the metathorax no particular deviations from the typical forms are to be observed. The formula of the tarsus of the anterior legs is 4:3:1:2:5; that of the intermediate legs is the same; in the posterior tarsi the formula is 4:3:2:1:5.

The coxæ of the intermediate legs are more developed than those of the anterior pair, and those of the posterior legs are still more developed. Between the metanotum and the dorsal plate of the first abdominal segment there is a quadrangular chitinous plate without hairs, which may perhaps represent the rudiment of an additional abdominal segment. The first abdominal segment is represented by a quadrangular dorsal plate. Every following segment, from the second to the seventh inclusive, consists of a dorsal plate, the lower margins of which extend backward in a wing-like process, and of two ventral plates, which are united in the middle line. The ventral plates are crescentiform, with the convex margin directed forward.

On the second segment the ventral plates are nearly quadrangular. The eighth segment has no dorsal plate, and is represented only by two ventral plates, which are of much more considerable size than the preceding ones, and these are separated from each other below. These plates are also crescentiform, with the convexity directed downwards. On the anterior branch of the crescent is placed the stigma of the eighth segment, and on the posterior one an oval surface, which is densely clothed with hairs. The ninth segment is represented by a dorsal plate, the anterior part of which bears a surface covered with very minute hairs, which stand upon specially circumscribed clear spots; the hinder part of this plate is entirely without hairs.

There are also belonging to the ninth segment two ventral quadrangular plates soldered together in the middle line, and these are covered with small hairs. The anus is situated in the eighth segment in front of its ventral plates.

In the distribution of the stigmata we observe no deviation, except in the case of the stigma of the eighth segment. Two pairs of small stigmata are placed upon the pro- and mesothorax, one pair of similar small stigmata upon the ventral plates of the eighth segment. Upon the wing-like scales of the metathorax and upon the anterior lower angles of the dorsal plates of segments 2-7 of the abdomen there are stigmata of considerable size beset with small hairs at the margins.

With respect to the clothing of hairs and setæ the following is to be remarked. On the lower surface of the head there are no spines, and the crest of spines on the pronotum is also deficient. On the head the hairs are situated in front of the eyes and behind the antennal pits. On each side of the mouth there is a seta,

which exceeds the maxillæ in length. On the dorsal plates of the thorax and abdomen the clothing is as follows:—The posterior hairs, which are much longer, are distributed in regular rows, and the anterior hairs, which are of smaller size, are scattered without any particular order. A similar distribution is to be observed upon the ventral plates of the ninth segment. On the other ventral plates the little hairs show no particular arrangement, and the ventral plates of the second segment are quite without hairs. The superior extremities of the pleuræ of the meso- and metathorax, as also the wing-like scales, are clothed with hairs, arranged upon the pleuræ in two, upon the scales in three rows. Further, the unpigmented cuticle of the abdomen is covered with transversely arranged rows of the smallest possible hairs. The coxæ of the first pair of legs are covered with hairs only in front, as also the coxæ of the other legs. The trochanter, the femur, the tibiæ, and the tarsus have their whole surface covered with little hairs. Much larger hairs are to be noticed at the anterior lower angle of the coxæ and trochanter in each leg. The femora have at their hinder angles two curved setæ. In the distribution of the spines upon the tibiæ and tarsi no deviations are to be remarked.—*Zoologischer Anzeiger*, February 9, 1885, p. 75.

*Completion of the History of Chaitophorus aceris, Fabricius.*

By M. J. LICHTENSTEIN.

In the 'Comptes Rendus' of the 17th June, 1867, MM. Balbiani and Signoret gave the history of the brown Aphis of the maple. These observers traced only half the biological evolution of the insect; M. Ritzema of Leyden, and Mr. Buckton in England, have added some details to those furnished by the French naturalists; and I can now give the complete series of the curious métamorphoses of this animal.

The ova of *Chaitophorus aceris*, concealed during the winter beneath the buds or in the fissures of the bark of the maple (here *Acer monspessulanum*, Linn.), are hatched in the early days of March: they furnish an apterous false female or *pseudogyne*, which, without concourse with the male sex, and after four moults at six days' intervals, or in from twenty to twenty-five days, brings forth some young Aphides, a portion of which acquire wings, and which spread for longer or shorter distances, according to their powers of locomotion, over the maples of the neighbourhood. This second phase, to which I have given the name of the *emigrant pseudogyne*, is agamic like that which preceded it, undergoes, like it, four changes of skin, and produces not only two, but three different forms of Aphides—one like itself, the second furnished with long hairs, and the third adorned with leaflets around its periphery.

All this has been told by MM. Balbiani and Signoret, at least in part, for it is especially to these latter forms that they paid attention. They say that they could not trace them further, and inquire